

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Claims.

1. (Amended) A semiconductor device, comprising:

a trench element separation region including a trench formed in a surface of a semiconductor substrate, the trench element separation region isolating separate semiconductor elements;

an oxide film formed on inner walls of the trench;

a trench filling insulating material filling the trench and having edges above the inner walls of the trench that are defined by side edges of a sacrificial layer formed by a pullback etching process including a neutral radical that is performed before filling the trench; and

wherein inner wall edges in a top section of the trench and the edges of the trench filling insulating material are formed so as to be essentially located on the same plane.

7. (Amended) A semiconductor device, comprising:

a trench element separation region including a trench formed in a surface of a semiconductor substrate, the trench element separation region isolating a first doped channel layer of a first insulated gate field effect transistor (IGFET) from a second doped channel layer of a second IGFET;

an oxide film formed on inner walls of the trench;

a trench filling insulating material filling the trench and having edges above the inner walls of the trench defined by side edges of a sacrificial layer formed by a pullback etching process including a neutral radical performed before filling the trench; and

wherein inner wall edges in a top section of the trench and the edges of the trench filling insulating material are formed so as to be essentially located on the same plane.